ORIGINAL

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 25 to Implement	)	IB Docket No. 99-67
the Global Mobile Personal Communications	)	
by Satellite (GMPCS) Memorandum	)	
of Understanding and Arrangements	)	
	)	
Petition of the National Telecommunications and	)	RM No. 9165
Information Administration to Amend Part 25 of the	)	
Commission's Rules to Establish Emissions Limits for	)	
Mobile and Portable Earth Stations Operating in the	)	
1610-1660.5 MHz Band	)	

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SUMMARY

ORBCOMM supports the Commission's proposals to adopt new equipment approval procedures for GMPCS subscriber terminals, and to require such approval or ITU registry for equipment to be operated in the United States. Such an implementation of the GMPCS MOU will facilitate the utility and availability of global satellite services, such as ORBCOMM's Little LEO offerings.

The current Part 2 and Part 25 technical specifications should form the basis of the equipment approval for Little LEO subscriber terminals, because those requirements were adopted in the context of a negotiated rulemaking. In addition, however, ORBCOMM suggests that the Commission harmonize its requirements with the soon-to-be-finalized ETSI standards. Such harmonization is consistent with the Commission's proposal to mutually recognize equipment approvals from other Administrations whose standards are consistent with the United States.

ORBCOMM also believes, however, that the current satellite system operators and subscriber terminal manufacturers should be provided a transition through the grandfathering of terminals, so long as the satellite system operator has a blanket license for the terminals. In a related vein, ORBCOMM urges the Commission to retain the requirement of blanket licenses for NVNG MSS subscriber terminals in order to provide full protection to the terrestrial users with whom the Little LEOs will be sharing.

Finally, ORBCOMM urges the Commission not to apply the E-911 requirements to the Little LEO service. Such requirements are technically difficult to implement, and would be counterproductive to the extent the added costs and other penalties would discourage subscribers from taking Little LEO services.

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COMMENTS OF ORBITAL COMMUNICATIONS CORPORATION

Orbital Communications Corporation ("ORBCOMM") hereby comments on the Commission's Notice of Proposed Rulemaking addressing the implementation of the global mobile personal communications by satellite ("GMPCS") Memorandum of Understanding and Arrangements, and NTIA's petition for rulemaking concerning protection of the GPS and GLONASS satellites from out-of-band emissions from Mobile Satellite Service terminals operating in the 1610-1660.5 MHz band.[1] ORBCOMM is very interested in this proceeding because of its role as a leader in the development of low-Earth orbit ("LEO") mobile satellite

[1] *Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements*, IB Docket No. 99-67, FCC 99-37, released March 5, 1999 (hereafter cited as "*Notice*").

services[2] and as the first commercial licensee and operator of a LEO satellite system.[3] As a provider of a global satellite system, ORBCOMM has a strong interest in the success of the GMPCS MOU. ORBCOMM has actively participated in the ITU proceedings leading up to the GMPCS MOU, has become a signatory to that agreement, and has had already acquired an ITU registry mark for use with ORBCOMM system material and is in the process of obtaining approvals necessary to use the mark on subscriber communicators.

ORBCOMM supports the Commission's proposals to implement the GMPCS arrangements through adoption of requirements for equipment approval for subscriber terminals to be used with GMPCS satellite systems. In addition, ORBCOMM supports the proposed out-of-band emissions limits placed on L-band mobile satellite systems as a means of protecting the GPS and GLONASS satellite systems.

I. The GMPCS MOU Will Facilitate Global Roaming

Unlike geostationary satellites, which maintain a fixed position relative to the surface of the Earth, LEO satellites constantly move relative to the Earth's surface. Therefore, in order to ensure continuous service to any particular area (such as the United States), a LEO operator

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[2] The data-only satellite services using spectrum below 1 GHZ are commonly known as Little LEO satellite services, and are alternatively referred to as Non-Voice, Non-Geostationary Mobile Satellite Services ("NVNG MSS").

[3] ORBCOMM filed the petition for rulemaking to allocate spectrum and develop service rules for Little LEO satellite services back in February, 1990. *Orbital Communications Corporation*, RM No. 7334, Public Notice Report No. 1814, April 4, 1990. The Commission subsequently adopted the proposed allocation, *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed-Satellite Service and the Mobile-Satellite Service for Low-Earth Orbit Satellites*, Report and Order, 8 FCC Rcd 1812 (1993), and ultimately licensed ORBCOMM's NVNG MSS satellite system. *Orbital Communications Corporation*, Order and Authorization, 9 FCC Rcd 6476 (1994); *recon. denied*, 10 FCC Rcd 7801 (1995), *license modified*, 13 FCC Rcd 13 FCC Rcd 10828 (1998), *license further modified*, 13 FCC Rcd 17525 (1998).

must deploy a constellation of satellites so that one or more satellites will be in range of a subscriber even as the other individual satellites move out of view. As a result of this constant movement of the constellation of satellites, LEO systems are inherently global, insofar as the satellites will overfly all of the Earth's surface, and thus can provide service practically everywhere on the planet. The global nature of the LEO satellite systems raises new international regulatory issues, some of which are being addressed by the *Notice* -- the adoption of equipment approval procedures to help support the rapid implementation of GMPCS arrangements. The GMPCS MOU recognizes that absent the free flow of subscriber terminals across national boundaries, it will be difficult (if not impossible) to make GMPCS truly global services.

The global nature of the LEO satellite systems provides enormous public benefits. A country can access the satellites and take advantage of those advanced services with a very modest up-front investment in a gateway Earth station.[4] As a result, satellite services are within the financial reach of nearly every country or region. LEO satellite systems thus support global universal service.

Likewise, subscribers benefit from the global reach of the LEO satellite systems. With a single transceiver, businessmen can maintain contact no matter where on Earth they are traveling, and recreational travelers can send for help no matter how remote the area to which they have gone. For applications such as cargo tracking, the container can be located throughout its travels.

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[4] In the case of the ORBCOMM system, a gateway Earth station and network control center to make service available within a country costs approximately $2.5 million. Moreover, the cost can be further reduced to the extent that several countries could share a single gateway Earth station. Indeed, in the Mahgreb region, several countries will be sharing an Earth station that is located in Morocco.

The United States, and indeed the rest of the world, recognized these numerous benefits when they allocated spectrum for global, LEO satellite systems.[5] In order to maximize the capabilities of these systems, regulatory impediments to the global availability of LEO satellite services must be eliminated or minimized. While the global nature of LEO satellite systems produces unique benefits, the global nature of these services also creates some new and unique regulatory challenges.

The *Notice* addresses a critical issue raised by the global nature of LEO satellite systems -- the capability to use the same subscriber communicator to roam among multiple countries. The ability of a subscriber to use his or her unit globally would be frustrated if that unit was subject to tariffs, duties, confiscation or testing and/or approval requirements separately in each country. A number of regulators, manufacturers and system operators convened under the auspices of an ITU World Telecommunications Policy Forum to address this issue. The Policy Forum developed a Memorandum of Understanding and a set of GMPCS Arrangements to support regulations that would foster global roaming, including blanket licensing, national type approval, marking, traffic information and customs recommendations.

The *Notice* addresses implementation of the MOU and GMPCS Arrangements by proposing equipment authorization procedures that would be compatible with the ITU registry program, and that would recognize similar equipment approvals from other countries. ORBCOMM believes that such an approach comports well with the regulatory scheme

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[5] International Telecommunications Union, Final Acts of the World Administrative Radio Conference (WARC-92), Malaga-Torremolinos (1992); *Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2500 MHz Bands for Use by the Mobile-Satellite Service, Including Nongeostationary Satellites*, 9 FCC Rcd 536 (1994); *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed-Satellite Service and the Mobile-Satellite Service for Low-Earth Orbit Satellites*, 8 FCC Rcd 1812 (1993).

envisioned by the Administrations and companies that adopted the GMPCS MOU as a means of facilitating global and regional satellite systems. In addition, the reciprocity reflected in the recognition of the ITU mark and the equipment approval from another country incorporated into that ITU mark is consistent with the Commission's policy in other contexts of recognizing equipment approvals from foreign Administrations.[6] ORBCOMM thus fully supports the Commission's proposals to adopt an equipment authorization requirement for GMPCS subscriber terminals, including those used for NVNG MSS.

At the same time, ORBCOMM believes the Commission should "grandfather" the terminals that have already been commissioned by the satellite system licensees as suggested in the *Notice*.[7] Those terminals are operating under a blanket authorization issued to the satellite system operator, thus minimizing any risk of harmful emissions.

In addition, ORBCOMM believes that the Commission should continue to allow the satellite system operator to commission subscriber terminals that have not yet obtained the ITU mark and/or the Commission's equipment authorization for a transitional period (of one year) after adoption of final rules in this proceeding, but only if the satellite system operator has a blanket license with which the terminals comply. Such a transition will allow manufacturers and satellite system operators to deplete their inventories without having to dispose of the terminals unnecessarily, particularly because it may not be possible to obtain equipment authorization and/or ITU registry retroactively. At the same time, consumers, other services or

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[6] *In the Matter of 1998 Biennial Regulatory Review -- Amendment of Parts 2, 25 and 68 of the Commission's Rules to Further Streamline the Equipment Authorization Process for Radio Frequency Equipment, Modify the Equipment Authorization Process for Telephone Terminal Equipment, Implement Mutual Recognition Agreements and Begin Implementation of the Global Mobile Personal Communications by Satellite (GMPCS) Arrangements*, 13 FCC Rcd 24687 (1998).

[7] *Notice* at ¶ 24.

other satellite systems will be protected from harmful emissions because part of the blanket authorization process is a demonstration that the terminals comply with the technical requirements of Part 25 and the environmental provisions of Part 2. Moreover, such a transition is consistent with Commission precedent, where the Commission has allowed manufacturers to reduce their inventory is an orderly manner.[8]

II. Equipment Authorization Requirements

ORBCOMM supports the Commission's proposal to require equipment authorization or ITU registry for GMPCS subscriber terminals to be used in the United States. While that should be a necessary condition for operation of the terminals, ORBCOMM does not believe that such Administration review of the characteristics of the GMPCS terminals is sufficient to ensure that the risk to other services or satellite systems is minimized. ORBCOMM urges the Commission to retain the requirement that the satellite system operator obtain a blanket license for subscriber terminals operating with its system, at least for the NVNG MSS.[9]

The NVNG MSS subscriber terminals will be operating in the 148-149.9 MHz band on a shared basis with government (military) users. In order to permit such sharing while minimizing the risk of interference to the government users, strict limitations were imposed on the NVNG MSS system operators. For wideband (CDMA) systems, those constraints include

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[8] *E.g., Petition to Amend Part 68 of the Commission's Rules to Include Terminal Equipment Connected to the Basic Rate Access Service Provided via Integrated Services Digital Network Access Technology*, 12 FCC Rcd 4615, 4617 (1997); *Access to Telecommunications Equipment and Services by Persons with Disabilities*, 11 FCC Rcd 8249, 8268 (1996); *Amendment of Part 95 of the Commission's Rules Regarding the Technical Standards for Transmitters Operating in the 72-76 MHz Band in the Radio Control Service*, 6 FCC Rcd 1975, 1976 (1991).

[9] 47 C.F.R. § 25.135.

power limits and duty cycle limits, as well as emission limits. For narrowband systems, those constraints include power limits, duty cycle limits, and restrictions on the length of the transmissions. In addition, in order to minimize interference to the government operations, each of the licensed narrowband NVNG MSS systems agreed to utilize an active avoidance technique like ORBCOMM's Dynamic Channel Activity Avoidance System ("DCAAS").[10]

Thus, for narrow-band MSS, non-interference to the terrestrial users requires the active supervision of the subscriber terminals by the satellite systems, and not simply limits on the technical characteristics of the subscriber terminals. As a result, equipment certification, by itself, will not adequately protect the government operations in the 148-149.9 MHz band. ORBCOMM therefore believes that the blanket licensing requirement for the NVNG MSS subscriber terminals is not redundant of an equipment authorization requirement for those same terminals, and that both blanket licenses and equipment authorization (or ITU registry) should be required.

In the case of blanket license applications, the satellite system operator would still have to demonstrate how its system would supervise the subscriber terminals so as to comply with the duty cycle limits and otherwise minimize the risk of harmful interference to the terrestrial users (*e.g.*, operate in a DCAAS-like manner). The blanket license application would not have to demonstrate how the subscriber terminals themselves comply with the technical limits (*e.g.*,

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[10] DCAAS allows MSS mobile Earth uplink stations to communicate effectively in the presence of nearly co-channel interference from mobile transmitters. In a DCAAS scheme, the satellite scans the entire uplink band for terrestrial channel activity. The instantaneous power level at the satellite for each channel is recorded and these measurements are combined with past measurements in a weighted time average for each potential channel. This weighted time average takes into account the short and long-term statistics of talker and calling activity and the channels are then ranked from most to least desirable in terms of potential for interference. The list of available channels is sent to the mobile Earth stations and each satellite periodically updates the list of available channels. MSS uplink channels can be re-assigned (on the order of every 5 seconds) in response to statistical time variation of channel use by mobile transmitters.

power limits and transmission length limits), because those presumably would be incorporated into the equipment approval application. In addition, the equipment approval application would demonstrate how the terminal complies with the RF radiation exposure requirements of the Commission's Rules. The blanket subscriber terminal application would have to explain, however, how the satellite system operator would "commission" terminals or otherwise demonstrate that it would only operate with compliant terminals (*i.e.*, terminals that have received equipment approval from the Commission or ITU registry).

Thus, although both equipment approval and a blanket subscriber terminal license would be required, the application process could be streamlined by eliminating unnecessary or redundant showings from the blanket license application. Such a streamlined "dual" application requirement would ensure that the risk of harmful emissions is minimized, without imposing any unnecessary burdens of the satellite system operators or equipment manufacturers.[11]

With respect to the particular technical standards that would apply to the equipment approval process for the NVNG MSS subscriber terminals, ORBCOMM believes that the current technical standards for the NVNG MSS subscriber terminals set forth in Part 25 and Part 2 (RF radiation exposure limits) are a good starting point. The Part 25 technical standards were adopted following a negotiated rulemaking in which the government users participated, and thus reflect the concerns of the terrestrial users with whom the NVNG MSS subscribers will be sharing.[12]

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[11] *Notice* at ¶ 31.

[12] In light of actual experience, ORBCOMM believes that some of the operating restrictions can be relaxed without increasing the risk of interference to the government users. ORBCOMM intends separately to seek such modifications of the Rules, and assuming it convinces the government users and the Commission that the proposed changes will not cause (Continued....)

In addition, however, the Commission should consider adopting technical specifications consistent with the most stringent combination of the existing FCC Part 25 emissions standards and the standards for NVNG MSS subscriber terminals that will shortly be adopted for the European community by ETSI.[13] Such consistency will assure harmony between Europe and the United States, and thereby facilitate global acceptance of the FCC approval for the NVNG MSS subscriber terminals. Indeed, to the same extent that the Commission indicated that it intends to review the equipment certification process of other Administrations "to develop a list of GMPCS terminals originating from abroad that have been certified to standards consistent with those in our rules" (*Notice* at ¶ 26), other Administrations can be expected to review the standards applied by the Commission. Thus, harmonization of the U.S. and European standards would ensure that equipment certified in this country can more readily be used abroad.

At the same time, ORBCOMM does not believe that incorporation of the ETSI standards would prejudice any of the U.S. systems. The ETSI standards development process is open and transparent, and U.S. satellite system operators had the opportunity to participate throughout that extended process. Indeed, ORBCOMM and E-SAT actively contributed to the ETSI process and significantly shaped the final standards adopted therein, and other Little LEO systems participated as well.

(....Continued)
additional interference, the equipment approval requirements should similarly be changed to parallel any such relaxations.

[13] ETSI European Norm (EN) 300 721. This standard has been approved by the ETSI Technical Committee on Satellite Earth Stations and will be submitted for ERSI membership vote in the near future.

III. Protection of the GPS/GLONASS Satellite Systems

In response to the petition filed by NTIA, the Notice also addresses limits on out of band emissions to protect the Radionavigation services.[14] ORBCOMM supports the proposed limits on out of band emissions for MSS subscriber terminals operating in the 1610-1660.5 MHz band as set forth in the *Notice*. The ORBCOMM satellites incorporate GPS receivers and rely on the GPS satellites for system timing information as well as accurately determining the position of ORBCOMM's satellites, which in turn allows some ORBCOMM subscriber communicators to determine the location of the user based on Doppler measurements. In addition, for certain applications where the Doppler measurements will not provide the necessary degree of accuracy, many of the ORBCOMM subscriber communicators will directly incorporate GPS receivers in the unit.[15] It is thus very important that the Big LEO satellite systems and other L-band MSS satellite systems avoid causing harmful interference to the GPS transmissions, and the proposed out-of-band emission limits will minimize the risk of any such harmful interference by the Big LEO systems.

ORBCOMM believes the out-of-band limits proposed in the *Notice* for the L-band MSS transmitters will provide adequate protection, and that the proposed limits should be readily achievable using good design techniques and filtering. Indeed, as the Notice observes, principals of the two Big LEO systems that are in or near operation believe that the emission

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[14] *Notice* at ¶¶ 44-97.

[15] Using the Doppler measurements, the ORBCOMM subscriber communicators can determine the location of the user with an accuracy of approximately +/- 500 meters. By including a GPS receiver in the ORBCOMM subscriber communicator, the accuracy can be increased to approximately +/- 50 meters.

limits proposed by the Commission should be adopted. [16]ORBCOMM thus urges the Commission to adopt the proposed out-of-band emissions limits as part of the L-band MSS subscriber equipment certification process.[17]

IV. The Commission Should Not Adopt the E-911 Requirements for The Little LEO Satellite Systems

ORBCOMM recognizes that E-911 services have the demonstrated capability of saving lives and property. ORBCOMM anticipates that, in some instances, ORBCOMM customers may also use their communicators to send emergency/distress messages. Nevertheless,

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[16] E.g. Notice at ¶ 69.

[17] ORBCOMM acknowledges that out of band emissions limits to protect the GPS and GLONASS satellite systems may subsequently be adopted for the NVNG MSS satellite systems as well. *Notice* at ¶ 3. However, ORBCOMM urges the Commission to prevent the legitimate protection of the GPS/GLONASS satellites from becoming an excuse to impose unnecessary burdens on Little LEO satellite subscriber communicators. For example, the Commission should be aware that at a recent ITU-WP8D meeting, an attempt was made to apply out-of-band limits near 1.5 GHz to ORBCOMM's 150 MHz subscriber transmitters by an operator of a MSS system. Before emission limits are mandated for any communication service, there should be a valid technical reason. Emission limits should not be applied to a new service just because it exists, or is an easy target. The GPS receive band that is being protected is near the 10th harmonic of the ORBCOMM transmitter and, since, as stated above, many of the ORBCOMM subscriber units contain GPS receivers, there is little likelihood that the proposed limit will be violated by the ORBCOMM transmitter. (The particular absurdity associated with the GPS limit is that it was set to ensure that an ORBCOMM transmitter operating within 10 meters of an aircraft would not cause the GPS receiver in the aircraft to malfunction. The ORBCOMM transmitter is presumably on the runway beneath a landing aircraft in this model. At the same time, the airport radars typically transmit wideband signals with eirp's thousands of times higher that any ORBCOMM transmitter). However, imposing the emission limit to protect GPS will mean that more tests will be required by all of the ORBCOMM Subsciber Communicator manufacturers. The danger is not that ORBCOMM will not protect GPS, it is in our own best interests to do so. The danger is in the "piling-on" of other services imposing unnecessary and nonsensical emission specification on systems which transmit at frequencies far removed from the receiver being "protected", thus increasing unnecessarily the testing costs for manufacturers.

ORBCOMM urges the Commission not to mandate compliance with the E-911 requirements for Little LEO satellite systems.[18/]

ORBCOMM believes subscribers to terrestrial mobile voice services reasonably expect to have access to 911 services. Indeed, the extensive use of cellular phones to access 911 services cited by the Commission in the E-911 proceeding fully supports the adoption of those requirements. In the case of non-voice satellite services, however, ORBCOMM does not believe that there is any similar expectation.

In contrast to cellular service, the NVNG MSS offerings are entirely new, so there is no expectation of 911 based on past experience or predecessor technology. Indeed, presently the E-911 network is not generally equipped to handle data connections, but instead is designed to transfer voice or voice equivalent (TTY) traffic from the caller to the emergency services provider. Thus, there could not have been any previous 911 access for non-voice services with respect to the wireless data offerings currently available. Moreover, many of ORBCOMM's subscriber terminals will be used for fixed, unmanned installations (*e.g.*, pipeline monitoring), where there is no need or expectation of E-911 access.

ORBCOMM also believes that the economic and technological constraints of NVNG MSS system, as well as the expected service offerings, would make it impractical and unnecessary to impose the wireless E-911 rules adopted by the Commission for terrestrial CMRS services on NVNG MSS systems.

Most of the ORBCOMM terminals can take advantage of the Doppler effect to provide positioning services in all subscriber terminals at no additional cost to the subscriber in terms of service fees, and little added cost for equipment purchase to achieve more refined positioning

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[18/] *Notice* at ¶ 98.

capabilities.[19] In essence, such a capability is a "free" side-benefit resulting from low-Earth orbit operations below 1 GHz. The position determination capabilities using the Doppler effect calculations are limited in their accuracy, however. Thus, this capability will be useful for many applications, although it does not meet the Commission's E-911 standard of 125 meter, three-dimensional accuracy.

ORBCOMM estimates that its system supports an accuracy of 500 meters available within 10 minutes using only a 137 MHz band receiver at 95% confidence for a non-moving subscriber terminal. The addition of a second 400 MHz band receiver (at an increased cost of about $50) improves the accuracy to roughly 300 meters. Additional time will allow more satellite passes and more calculations, which will result in a further refinement of the positioning accuracy. ORBCOMM thus estimates that within 30 minutes, the accuracy of a single 137 MHz band receiver subscriber unit will increase the accuracy to roughly 350 meters; the addition of a second 400 MHz band receiver further increases that accuracy to approximately 220 meters.

Improved positioning capabilities to meet the E-911 requirements are not feasible using the ORBCOMM system alone. At present (and for the immediate future), the only means to improve the positioning accuracy would be to add GPS capabilities to ORBCOMM transceivers. ORBCOMM does not believe that such a solution is viable for NVNG MSS.

Full-function, stand alone NVNG MSS transceivers are presently priced in the neighborhood of $700 retail, although ORBCOMM expects those prices to drop as the volumes produced by manufacturers increase. Addition of GPS capability would increase the cost of

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[19] A more refined capability can be obtained by adding a second receiver in the 400 MHz band to the subscriber terminals. ORBCOMM estimates that the second receiver adds roughly $50 to the cost of the transceiver.

each subscriber terminal by some $200 to $300. In addition, the inclusion of GPS capability in an ORBCOMM transceiver would roughly double the weight of the unit and reduce the battery life by approximately 90%. Moreover, the size of the unit would increase by about 100%, including the need for a second antenna approximately 3" by 3".

The decreased performance characteristics in terms of battery life, weight and size would seriously reduce the functionality of an ORBCOMM receiver as a truly compact and portable data communicator. The ability to utilize an ORBCOMM receiver when hiking or camping or engaging in other activities in remote areas would be severely compromised. In addition, the increase in cost for the transceivers would likely dampen demand significantly, thereby further reducing the market penetration for these services.

ORBCOMM does not believe that the public interest would be served by effectively mandating the addition of GPS capability into all ORBCOMM transceivers.[20/] While a somewhat lesser degree of positioning accuracy would be available to emergency services providers without the GPS function, absent the individual's carrying of an ORBCOMM transceiver, there likely would be no communication at all between the individual and the emergency services provider and no position information available. ORBCOMM believes that the reduction in battery life and increase in price, size and weight resulting from a mandatory GPS capability would significantly decrease demand for the NVNG MSS services. Thus imposition of a "GPS requirement" ultimately will lead to a reduction in the information available to emergency services providers.

[20/] ORBCOMM anticipates that some subscribers will need or desire a greater level of positioning accuracy for some particular applications. In those cases, the subscriber will be able to purchase ORBCOMM transceivers that do include GPS capabilities at an added cost. That decision should be left to the consumer, however, who is in the best position to judge the need for and value of the higher level of accuracy.

ORBCOMM contends that the public interest would be better served by not artificially constraining the provision of the positioning information inherent in ORBCOMM's services, rather than in effect eliminating all information and communication capability by imposing the equivalent of a GPS requirement. The access and "limited" automatic location information as will be provided by ORBCOMM is better than no access and no position information at all, which would be the case if the prices for the handsets and services are driven beyond the levels customers are willing to pay by imposing unrealistic position accuracy requirements.

Moreover, decreasing the demand for NVNG MSS by unnecessarily driving up the prices would also reduce the other benefits made possible by these new communications services. As the Commission recognized in granting ORBCOMM its license, implementation of its system will make available to "U.S. consumers, and the world, innovative, affordable and portable satellite communications capabilities."[21/] These services in turn will lead to increased efficiency, enhanced export opportunities and job creation. ORBCOMM therefore urges the Commission not to impose on NVNG MSS the E-911 rules for Commercial Mobile Radio Service providers.

ORBCOMM does anticipate that its system will be very useful for many types of emergency applications. Although ORBCOMM provides coverage in both urban and rural environments, the principal users of its mobile satellite service will be those individuals who need or desire the capability to send and receive non-voice messages in those areas where wireline services and tower-based services are limited or unavailable. As such, ORBCOMM anticipates that many of the emergency messages that are likely to be generated will be related

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21/ *Orbital Communications Corporation,* 9 FCC Rcd 6476 (1994) at ¶ 29.

to search and rescue ("SAR") rather than the traditional 911 type message. The positioning capabilities of the ORBCOMM system are well suited for these purposes.

Nonetheless, ORBCOMM recognizes that some subscribers will want to use their communicators to send 911-type messages, and ORBCOMM intends to address the needs of these potential users by providing the appropriate Public Service Answering Point ("PSAP") with the necessary information to respond to the alert.

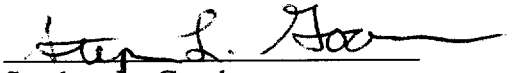
ORBCOMM's satellite system provides continuous near real time coverage of the continental United States, as well as large areas of Alaska. All ORBCOMM messages regardless of the point of origination, whether distress or not, will pass through the ORBCOMM network control center ("NCC") at ORBCOMM's headquarters in Dulles, Virginia. From there the messages will be routed to their addressed destination using standard E-mail protocols.

Unlike the public switched telephone network ("PSTN"), which can identify a caller's telephone number and rapidly transfer a 911 call to the caller's local PSAP, ORBCOMM is not a local system. Thus, for example, there currently is no way for a distress call received at ORBCOMM's Dulles, Virginia control center from a subscriber in distress to automatically be routed to the PSAP nearest the incident. Assuming that ORBCOMM as well as other NVNG MSS providers will ultimately be used for the transmission of emergency 911-type messages, then it will be necessary to develop a mechanism for the rapid routing of these messages to the distressed party's local PSAP. Such a system does not yet exist, thus providing an additional basis for not applying the E-911 requirements to NVNG MSS satellite systems.

V. Conclusion

ORBCOMM supports the Commission's proposals to adopt new equipment approval procedures for GMPCS subscriber terminals, and to require such approval or ITU registry for equipment to be operated in the United States. The current Part 2 and Part 25 technical specifications should form the basis of the equipment approval, although ORBCOMM additionally suggests that the Commission harmonize its requirements with the soon-to-be-finalized ETSI standards. ORBCOMM also believes, however, that the current satellite system operators and subscriber terminal manufacturers should be provided a transition through the grandfathering of terminals, so long as the satellite system operator has a blanket license for the terminals. In a related vein, ORBCOMM urges the Commission to retain the requirement of blanket licenses for NVNG MSS subscriber terminals in order to provide full protection to the terrestrial users with whom the Little LEOs will be sharing. Finally, ORBCOMM urges the Commission not to apply the E-911 requirements to the Little LEO service. By taking the steps suggested in these Comments, the Commission will best serve the public interest.

Respectfully submitted,



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